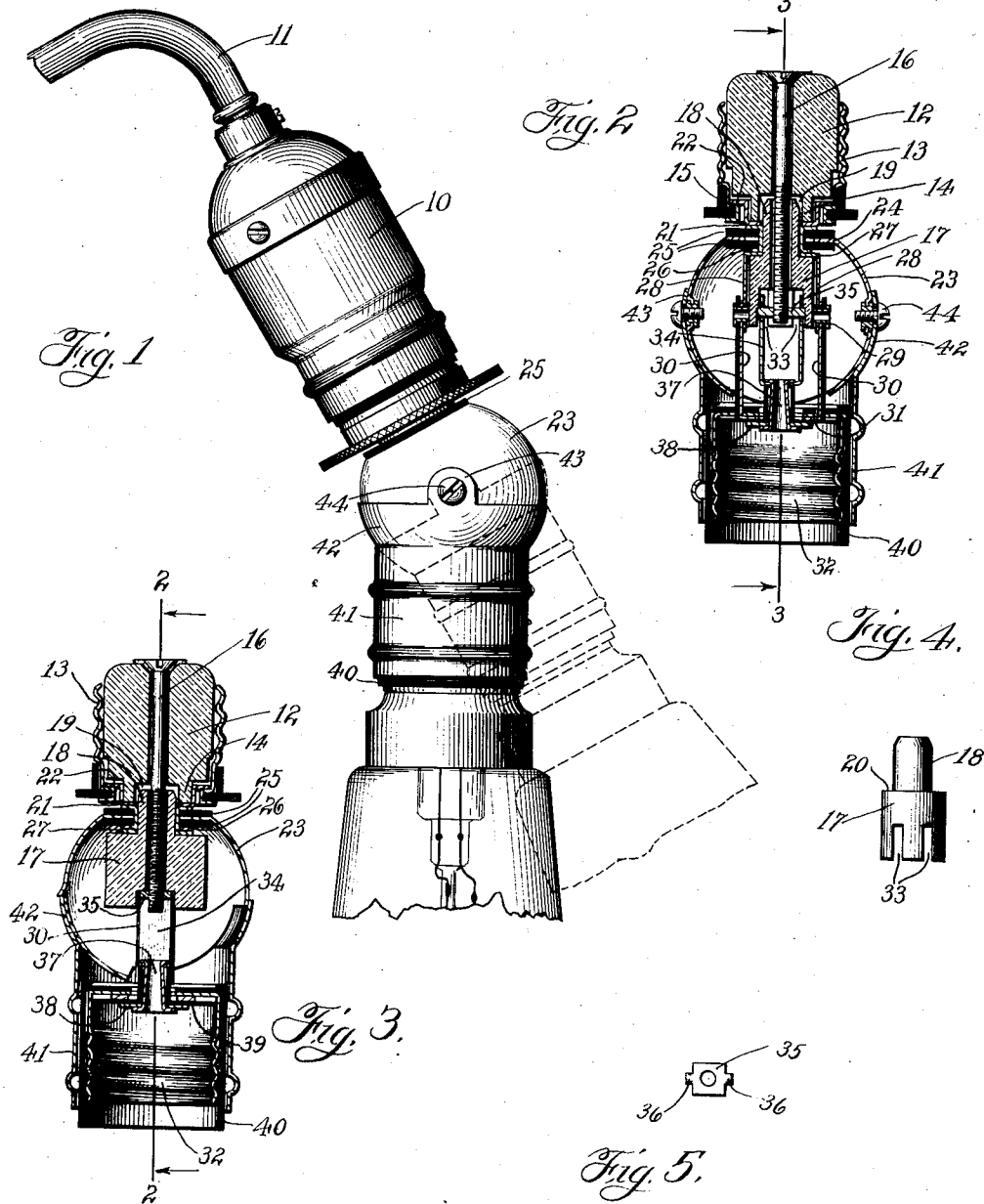


R. B. BENJAMIN.
ADJUSTABLE EXTENSION SOCKET.
APPLICATION FILED JULY 17, 1908.

1,038,070.

Patented Sept. 10, 1912.

2 SHEETS—SHEET 1.



Witnesses:

Wm. M. Haenel
Chas. L. Hopkins

Inventor:

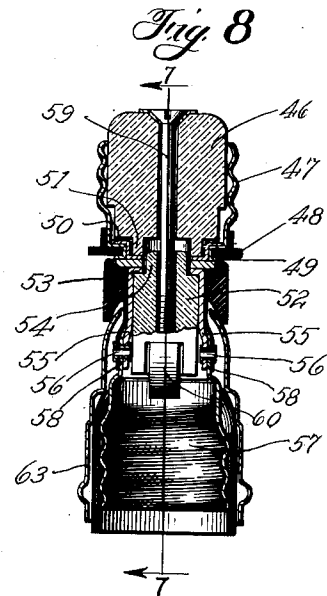
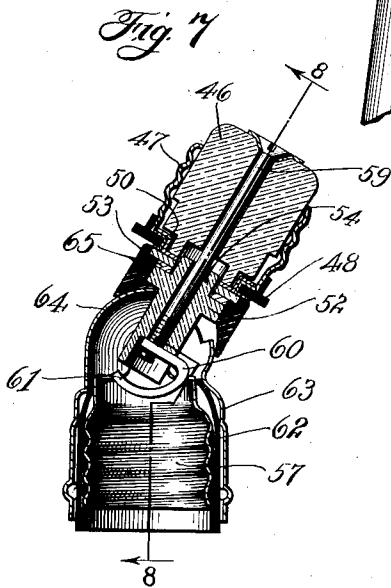
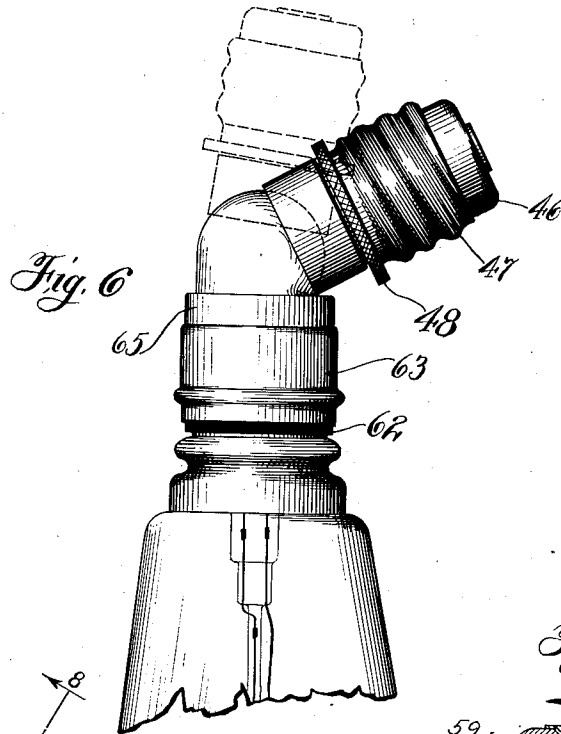
Reuben B. Benjamin,
By Jones, Addington & Ames,
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

REUBEN B. BENJAMIN, OF CHICAGO, ILLINOIS, ASSIGNOR TO BENJAMIN ELECTRIC MANUFACTURING COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

ADJUSTABLE EXTENSION-SOCKET.

1,038,070.

Specification of Letters Patent. **Patented Sept. 10, 1912.**

Application filed July 17, 1908. Serial No. 444,121.

To all whom it may concern:

Be it known that I, REUBEN B. BENJAMIN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Adjustable Extension-Sockets, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawing, forming a part of this specification.

This invention relates to an electric lighting appliance which is adapted to be inserted into a socket designed for the reception of an incandescent lamp, and to itself receive the lamp and establish the proper connections between the contacts of the socket and the terminals of the lamp.

The object of the present invention is to provide a device of this type which is so constructed that the position of the lamp with respect to the direction of the axis of the socket into which the device is inserted may be varied at will. An extension socket having this characteristic has many applications to practical use, among which may be mentioned the case where the socket with which connection is to be made is located at the end of a chandelier arm which extends in such a direction that the axis of the socket is inclined to the vertical. A certain type of lamp, having a metal filament, has lately come into extended use, but lamps of this type, although possessing features of great advantage, are not adapted for use in any other than a vertical position, and consequently cannot, with advantage, be used in inclined sockets, as in the case of the chandelier described.

With an extension socket which provides for movement between the fixed socket and the lamp it is possible, by the use of a shade over the lamp, to direct the light from the lamp downward upon a desk or table, even though the fixed socket be inclined to the vertical. Other instances in which such an extension socket may with advantage be used will occur to the reader.

To the accomplishment of the object of this invention, I provide a device having at one of its ends a plug portion adapted to be inserted into a fixed socket and having contacts located to engage the corresponding contacts of said socket, the device carrying at its opposite end a lamp receptacle having lamp-terminal-engaging contacts electrically

connected with the contacts of the plug, the plug and receptacle being arranged to have a certain amount of angular movement with respect to each other, and the means which provide electrical connection between the contacts of the plug and receptacle being adapted to maintain conducting connection.

In the accompanying drawings I have illustrated two forms which my invention may take.

Figure 1 is an elevational view of a preferred form of the device applied to a stationary socket extending at an angle with the vertical, and carrying a lamp with its axis disposed vertically; Fig. 2 shows a longitudinal section taken through the device on the line 2—2 of Fig. 3, looking in the direction of the arrows; Fig. 3 shows a longitudinal section taken through the device on the line 3—3 of Fig. 2, looking in the direction of the arrows; Fig. 4 is an elevational side view of a member formed of insulating material and which separates certain of the conducting parts of the device; Fig. 5 is an elevational view of a detail part; Fig. 6 is an elevational view of a modified form of the device with a lamp in place therein; and Figs. 7 and 8 are longitudinal sectional views of the device, taken on planes at right angles with each other.

Referring first to that form of the device shown in Figs. 1 to 5 inclusive, 10 is a fixed socket carried by an arm 11 and extending at an angle of about forty degrees with the vertical. The extension socket comprises an insulating plug 12 which is inserted into the socket 10 and which is provided with an outer contact member in the form of a threaded metallic sleeve 13, preferably arranged to revolve around the plug 12. The plug 12 is given a smaller diameter at its lower or inner end 14, and the inner end 15 of the threaded sleeve 13 is drawn in to give this portion a smaller diameter than its body, whereby the sleeve is prevented from being drawn off over the outer end of the plug 12. A screw 16 extends longitudinally and centrally through the plug 12 and serves as a center terminal for engagement with the center contact of the fixed socket when the device is in place therein. This screw 16 also extends centrally through a base member 17, shown by itself in Fig. 4, this member being formed of porcelain or other suitable insulating material. The insulating mem-

ber 17 is formed with a portion 18 of reduced diameter which extends into a suitable recess 19 in the smaller end 14 of the plug 12. Clamped between this end of the
 5 plug and the shoulder 20 on the insulating member 17 is a dished plate 21, the outer edge 22 of which overlaps the restricted portion 15 of the sleeve 13, whereby electrical communication is effected between the
 10 plate 21 and this revolving contact member 13.

Partly inclosing the insulating base member 17 is a substantially spherical metallic casing 23 having an opening through which
 15 extends the cylindrical portion 18 of the member 17, the edge 24 of the metal around the opening being covered on the inside and outside of the shell by insulating rings 25, a thin metallic eyelet-shaped member 26 extending through the rings 25 and holding
 20 the whole firmly together. This eyelet-shaped member 26 engages the under side of the dished plate 21 and is in turn engaged by a plate 27 which surrounds the portion
 25 18 of the insulating member 17 and is provided with a pair of legs 28 which extend downwardly on opposite sides of the member 17. The lower end of each of these legs
 30 28 is pivoted, by means of rivets 29, to flat strips 30 which extend through an opening in the shell 23, the lower ends 31 of these strips being inserted through suitable openings
 35 in the bottom of a cup-shaped threaded receptacle shell 32, and being bent toward each other and secured to the shell 32 by soldering or otherwise.

The insulating base 17 is formed with a pair of grooves 33 into which extend the
 40 ends of a U-shaped metallic strip 34, these ends being perforated, as shown. On the inner end of the screw 16 is a nut 35 having lateral projections 36 which occupy the holes in the ends of the strip 34, whereby the
 45 strip 34 is hinged to the nut and at the same time is kept in electrical connection with the center screw 16. The lower portion of the U-shaped strip 34 is formed with an opening through which extends a hollow rivet 37
 50 which extends through a central opening in the threaded receptacle shell 32 and forms the center contact for engagement with the center terminal of a lamp when inserted into the shell. Under the head of the rivet 37 is
 55 a plate 38, and between the plate 38 and the inturned ends 31 of the strips 30 is a mica insulating disk or washer 39, the latter serving to insulate the rivet 37 and washer 38 from the strips 30 and the bottom of the shell. Surrounding the socket 32 is an insulating
 60 sleeve 40, and surrounding this sleeve is a metallic shell comprising a tubular portion 41 and an expanded portion 42 which incloses the lower part of the spherical shell 23 and is provided with a pair of ears 43, through which extend screws 44 into the

shell 23. The expanded portion 42 is arranged to cover at all times the open portion of the shell 23. The screws 44 serve as hinges upon which the parts of the casing
 70 move with respect to each other. The screws 44, rivets 29 and nut 35 are arranged in line with each other so that all of the hinged parts move on the same axis, and no strain is brought upon any part by swinging the parts of the device relatively to each
 75 other.

When it is desired to use an extension socket of this form, in combination with a stationary socket and a lamp, the lamp may
 80 be screwed into the receptacle 32 of the device, after which the plug portion of the device will be inserted into the stationary socket and the rotary contact 13 will be turned in. The rotation of the sleeve 13
 85 causes the same to advance into the socket 10 as its screw threads engage those within the socket. When the sleeve 13 has been screwed into the socket as far as possible, and the center contact 16 engages the center
 90 contact of the stationary socket the device as a whole is locked firmly against rotary movement in the socket. If it be desired to shift the device in the fixed socket this may
 95 be effected by turning the contact 13 back for a short distance and adjusting the device around in the socket to the desired position. The sleeve 13 being then firmly
 100 screwed up again, the device is again locked against rotation or the possibility of working out under the influence of vibration or from other causes.

In the modified form of device shown in Figs. 6, 7 and 8, the plug 46 is provided
 105 with a rotary outer contact member 47, these parts corresponding to the plug and outer contact of the form of device hereinbefore described. The outer contact is provided
 110 with an insulating collar 48, and has its lower end 49 drawn in under the outer edge of the dished plate 50 which surrounds the inner reduced end 51 of the plug. Clamped between the base 52 and the plate 50 is a
 115 plate 53 which surrounds the reduced end 54 of the base 52 and is provided with a pair of downwardly extending legs 55. To each of these legs is hinged, by means of a rivet
 120 56, a threaded lamp-receiving shell 57, the rivets 56 extending through ears 58 on the shell. In this case the means for conducting current from the center contact of the plug
 125 to the center terminal of the lamp is not constructed in hinged sections but consists of the center screw 59 and a plate 60 into which the threaded end of the screw takes, this plate having an end 61 which is curved
 130 on a radius having for its center the axis passing through the rivets 56 on which the movable parts of the device swing relatively to each other. Surrounding the socket 57 is an insulating sleeve 62 which insulates

the socket from the outer metallic casing shell 63. The upper portion 64 of this casing shell is dome-shaped and is formed with an opening through which extends the base 52. A ring 65, of insulating material, surrounds the base 52 and has its lower side shaped to conform to the dome-shaped casing, so that, as the parts are moved on their hinges, the opening in the casing is kept closed at all times.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. An adjustable extension plug lamp socket comprising a plug adapted to be inserted into a wall socket or the like, a conducting member in electrical communication with the outer contact of said plug, and a lamp receiving socket having its outer-lamp-terminal-engaging shell hinged to said conducting member.

2. An adjustable extension plug lamp socket comprising a plug adapted to be inserted into a wall socket or the like, a conducting member in electrical communication with the outer contact of said plug, a lamp receiving socket having its outer-lamp-terminal-engaging shell hinged to said conducting member and a casing hinged co-axially with the hinge of said conducting member, for inclosing the same.

3. An adjustable extension plug socket comprising a plug adapted to be inserted

into a wall socket or the like, the center contact of said plug being extended rearwardly, a conducting member in electrical communication with the outer contact of said plug, a lamp receiving socket having its outer-lamp-terminal-engaging shell hinged to said conducting member, and a second conducting member extending rearwardly from the center contact of said socket and hinged to the rearward extension of the center contact of said plug.

4. An adjustable extension plug socket comprising a plug adapted to be inserted into a wall socket or the like, the center contact of said plug being extended rearwardly, a conducting member in electrical communication with the outer contact of said plug, a lamp receiving shell having its outer-lamp-terminal-engaging shell hinged to said conducting member, a second conducting member extending rearwardly from the center contact of said socket and hinged to the rearward extension of the center contact of said plug, and a casing hinged co-axially with the hinges of said conducting member, for inclosing the same.

In witness whereof, I have hereunto subscribed my name in the presence of two witnesses.

REUBEN B. BENJAMIN.

Witnesses:

CHARLES G. COPE,
CHAS. L. HOPKINS.